REMARKS

Claims 1-35 are pending in the present application. Claims 1, 5, 6, 8, 10, 19, 20, 21, 22, 23, 30, 34, and 35 have been amended, Claim 36 has been added, leaving Claims 1-36 for consideration upon entry of the present Amendment. Support for the amendments made to Claim 1 can be found on Page 5, lines 1-17 of the Specification. Claims 19-22 have been amended to correct a typographical error. No new matter has been introduced by these amendments. Reconsideration and allowance of the claims is respectfully requested in view of the above amendments and the following remarks.

Specification

Applicants have revised the specification to correct typographical errors.

Claim Rejections Under 35 U.S.C. §112, second paragraph

Claims 1-29 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants have amended Claims 1, 5, 8, and 23 as suggested by the Examiner. Applicants respectfully request withdrawal of this rejection.

Drawing Objections

Applicants have revised Figure 3 to address the Examiner's objection. A new Figure 3 is attached, which shows the changes in red. Applicants respectfully request withdrawal of this objection.

Claim Rejections Under 35 U.S.C. §103

Claims 1-35 stand rejected under 35 U.S.C. §103(a), as being unpatentable over DiTullio (U.S. Pat. No. 5,087,151) in view of Fouss et al. (U.S. Pat. No. 4,360,042). For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

The Examiner alleges that DiTullio discloses a fluid management system comprising a first chamber seen in Fig. 1 and that Fouss et al. teach a semicircular, constant curve cross-sectional geometry for a fluid management system to provide the desired compressive

strength under the loading conditions (Col. 3, lines 43-56 and Col. 4, lines 29-48). The Examiner alleges that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the shape of the chamber of DiTullio to be a semicircular, constant curve cross-sectional geometry as taught by Fouss et al., since Fouss et al. state that such a shape provides the desired compressive strength under the loading conditions.

Claims 1 and 30, as amended, provides in pertinent part, "said major axis is disposed along an inner height of said first chamber and is perpendicular to said central axis; and ***a center point of said major axis is disposed below a base of said first chamber***." (Emphasis supplied.) By locating the center point of the major axis below the base of the first chamber, the height to width ratio of the first chamber is adjusted. Moreover, the height to width ratio is adjusted without changing the parabolic arch of the first chamber.

DiTullio and Fouss et al. do not teach or suggest that limitation. DiTullio teaches a leaching gallery 10 having a trapezoidal shape. (Col. 4, lines 7-12) The sides of the leaching gallery 10 are straight sidewalls 16 and are not curved. (Figure 1) Fouss et al. teach an arched cross section conduit having a generally triangular shape with walls being generally linear. These walls, which may be more rounded, may define semi-circular, semi-elliptic, or multiradii cross sections. (Col. 3, lines 44-53) Fouss et al. focus on a foldable arched conduit that is folded during shipment. There is no disclosure, teaching, or suggestion that a center point of a major axis of an a-circular cross section is disposed below a base of the first chamber. While Fouss et al. discuss the various height to width ratios that they prefer with the parabolic arch of the conduit with such adjustment of the height to width ratio being achieved through changing the curve of the parabolic arch. (Col. 11, lines 20-37) Indeed, Fouss et al. has an extensive discussion of changing the height to width ratio through changing the parabolic arch. However, throughout Fouss et al., the center point of the circular or a-circular shape remains at the base of the conduit. (Figures 6-13) Fouss et al. do not teach or suggest a center point of the shape below the base of the conduit as in Claims 1 and 30 of the present application. Fouss et al. also fails to teach or suggest a height based upon the major axis as in claims 5, 6, 34, and 35 of the present application, as well as other aspects of the present application.

The concept of moving the center point of the major axis to below the base of the first chamber is different from changing the parabolic arch. Fouss et al. do not teach or suggest the particular shape in the present application in which the center point of the major axis is below the base of the first chamber. This shape has certain structural advantages over Fouss et al. in that it produces a strength that is a safety rating of greater than or equal to about 1.95 as per American Association of State Highway and Transportation Officials H-20 standard. Considering that DiTullio fails to teach a chamber having a constant curve geometry and fails to teach a center of a major axis disposed below a base of the chamber, Fouss et al., alone and in combination with DiTullio, fails to render the present application obvious. Accordingly, the rejection regarding Claims 1 and 30 should be withdrawn and Claims 1 and 30 should be allowed.

As dependent claims, Claims 2-29 incorporate all of the limitations of Claim 1, and Claims 31-35 incorporate all of the limitations of Claim 30. Thus, for the reasons discussed above, the rejections as to Claims 2-29 and 31-35 should be withdrawn and the claims allowed.

In addition, Applicant has added Claim 36. This claim is allowable because none of the cited references disclose, teach, or suggest a system having a safety rating as claimed therein. As such, claim 36 is allowable.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and withdrawal of the rejections, and allowance of the case is requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicants' attorneys.

Respectfully submitted,

KRUGER ET AL.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please amend the paragraph in the specification beginning at page 2, line 12 in "marked up" form, as follows:

The present disclosure relates to a stormwater containment system. This system comprises: a chamber having an overall substantially constant curve cross-sectional geometry, said chamber having a base with a flange extending outward from said base; and a plurality of protrusions which form a plurality of peaks and valleys, said ~~corregations~~corrugations disposed perpendicular to a major axis of said chamber.

Please amend the paragraph in the specification beginning at page 2, line 27 in "marked up" form, as follows:

Figure 4 is a cross-sectional view of one embodiment of ~~corregations~~corrugations taken along lines 12-12 of Figure 2;

Please amend the paragraph in the specification beginning at page 5, line 24 and continuing to page 6, line 6 in "marked up" form, as follows:

To further enhance structural integrity, the chamber comprises a plurality of longitudinally disposed, substantially parallel ~~corregations~~corrugations 3 which form a series of peaks 5 and valleys 7. These ~~corregations~~corrugations 3 can have any suitable cross-sectional geometry taken along lines 12-12 (see Figures 2 and 4), such as whole or truncated arch shaped (e.g., semi-circular, semi-elliptical, semi-hexagonal, semi-octagonal, truncated triangular, and the like), whole or truncated multi-sided (e.g., three sided, square, rectangular, trapezoidal, hexagonal, octagonal, and the like). In addition, a cross-sectional geometry along lines 8-8 (i.e., taken in the direction perpendicular to the central axis "a"), of a constant curve, concavo-concave shape preferred. (See Figure 2) The sides of ~~corregations~~corrugations 3 preferably have an angle θ and size to optimize load bearing characteristics. Generally, the sides of ~~corregations~~corrugations 3 can have an angle θ of up to about 45°, with an angle θ of about 3° to about 35° preferred, and an angle θ of about 5° to about 25° especially preferred.

Please amend the paragraph in the specification beginning at page 6, line 14 in "marked up" form, as follows:

Additional structural integrity can be supplied to the chamber by optionally employing one or more supporting element(s) 11 and/or connecting member(s) 13. The supporting element(s) 11, disposed longitudinally at or near the base of the chamber 1, substantially perpendicular to the ~~corregations~~corrugations 3 and traversing one or more, preferably two or more, of the peaks 5 and valleys 7, provide structural integrity to flange 10 in a direction parallel to the length of chamber 1, i.e., in the longitudinal direction. To provide support to flange 10 in the direction normal to the length of the chamber 1, one or more connecting members 13 can optionally be disposed on the flange 10, extending outward from the chamber 1. If the supporting element(s) 11 are employed, the connecting member(s) 13 can be disposed between the chamber 1 and the supporting element(s) 11 or extending outward from supporting element(s) 11. Preferably, connecting member(s) 13 are in physical contact with both the supporting element(s) 11 and the peak(s) 5 and/or valley(s) 7 of the chamber 1, with two connecting members 13 disposed in physical contact with a ~~corregation~~ corrugation 3 preferred. (See Figure 6)

Please amend the paragraph in the specification beginning at page 6 line 28 and continuing to page 7, line 10 in "marked up" form, as follows:

Both the supporting element(s) 11 and the connecting member(s) 13 can be solid or hollow; homogenous, filled, or a composite; and can have any geometry which provides the desired structural integrity. Some possible geometries include those employed for the ~~corregations~~corrugations 3. Furthermore, the size of the supporting element(s) 11 and the connecting member(s) 13 can be similar, with the supporting element(s) 11 preferably having a height equal to or less than or equal to the height of the connecting members 13. A connecting member height of about 100% to about 600% of the supporting element height is preferred, with a height of about 300% to about 500% of the supporting element height especially preferred. Although a connecting member height up to about 15% of the height of the chamber and a width up to about 95% or more of the width of the flange 10 can be employed, a height of about 2% to about 12% of the height of the chamber and a width up to about 80% of the width of the flange 10 are typically employed, with a height of about 5% to about 10% of the height of the chamber preferred.

Please amend the paragraph in the specification beginning at page 9, line 8 in "marked up" form, as follows:

The face 21 of the endplate 17 can similarly have any geometry and design that imparts the desired structural integrity to the management system. Preferably the endplate 17 is designed to be used as an endplate (at one or both ends of the management system), or as a support and/or a baffle (within the management system). Typically, at least one endplate (baffle) is located at or near each end of each chamber. Consequently, although subsequent chambers interconnect, a support would be employed at or near the interconnection point to ensure the desires structural integrity of the system. Optionally, an endplate can be disposed in one or several of the ~~corregations~~ corrugations 3 along the length of the chamber to further enhance the structural integrity of the chamber.

IN THE CLAIMS:

A marked-up version of Claims 1, 5, 6, 8, 10, 19, 20, 21, 22, 23, 30, 34, and 35 follows:

1. (Amended/Marked up) A fluid management system, comprising:

a first chamber having a central axis, a major axis, and an a-semicircular, constant curve cross-sectional geometry, said major axis is disposed along an inner height of said first chamber and is perpendicular to said central axis; and

a center point of said major axis is disposed below a base of said first chamber,

wherein said cross-section is taken in ~~the~~ a direction perpendicular to ~~a~~ said central axis.

5. (Amended/Marked up) A fluid management system as in Claim 1, wherein said inner height is up to about 49% of ~~a~~ said major axis ~~associated with an acircular shape which would form said cross-sectional geometry~~.

6. (Amended/Marked up) A fluid management system as in Claim ~~5~~1, wherein said inner height is about 44% to about 48% of said major axis.

8. (Amended/Marked up) A fluid management system as in Claim 7, wherein said support member spans two or more ~~of said corregations~~corrugations.

10. (Amended/Marked up) A fluid management system as in Claim 7, further comprising connecting elements disposed between ~~said corregations~~corrugations and said support member.

19. (Amended/Marked up) A fluid management system as in Claim 1, further comprising a plurality of ~~corregations~~corrugations which form a plurality of peaks and valleys, said ~~corregations~~corrugations disposed perpendicular to ~~a~~ said major axis of said first chamber.

20. (Amended/Marked up) A fluid management system as in Claim 1, wherein said ~~corregations~~corrugations have sides oriented at an angle of up to about 45° with relation to a centerline of the ~~corregation~~corrugations.

21. (Amended/Marked up) A fluid management system as in Claim 20, wherein said ~~corregations~~corrugations angle is about 3° to about 35°.

22. (Amended/Marked up) A fluid management system as in Claim 21, wherein said ~~corregations~~corrugations angle is about 5° to about 25°.

23. (Amended/Marked up) A fluid management system as in Claim 1, further comprising one or more supporting element(s) on ~~said~~ a flange, disposed parallel to the length of said first chamber; and one or more connecting member(s) disposed on said flange, between said supporting element(s) and said first chamber, at an orientation perpendicular to said supporting element(s) and said first chamber.

30. (Amended/Marked up) A method of fluid management, comprising:

disposing a plurality of chambers at least about 6 inches below the surface of the ground, said chambers each having a central axis, a major axis, and an a-semicircular, constant curve cross-sectional geometry, said major axis is disposed along an inner height of said first chamber and is perpendicular to said central axis; and

disposing a center point of said major axis below a base of said first chamber, wherein said cross-section is taken in the direction perpendicular to the central axis.

34. (Amended/Marked up) A method of fluid management as in Claim 30, wherein said inner height is up to about 49% of ~~a~~ said major axis ~~associated with an acircular shape which would form said cross-sectional geometry~~.

35. (Amended/Marked up) A method of fluid management as in Claim ~~34~~30, wherein said inner height is about 44% to about 48% of said major axis.